Quick Guide

EE211 - Humidity and Temperature Sensor for Continuous High Humidity

your partner in sensor technology.

PLEASE NOTE

Find this document and further product information on our website at www.epluse.com/ee211.

Assembly and Installation

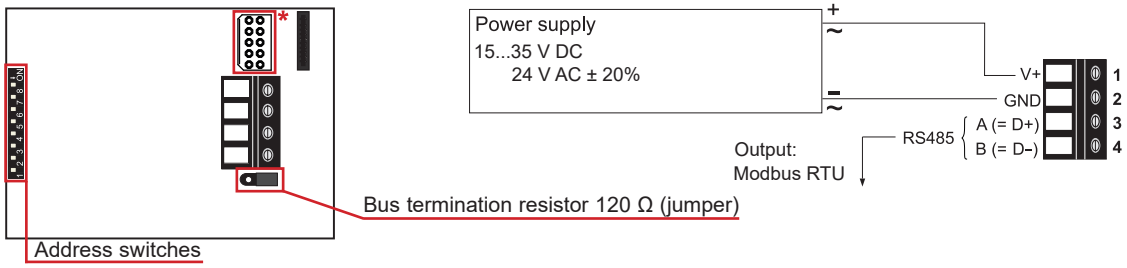
- Insert the supplied M20 cable gland into the corresponding cable entry of the EE211 base unit and tighten the locknut securely.
- Install the EE07-M3 temperature probe either directly on the M12 connector of the EE211 base unit or by using the optional probe cable.

Electrical Connection

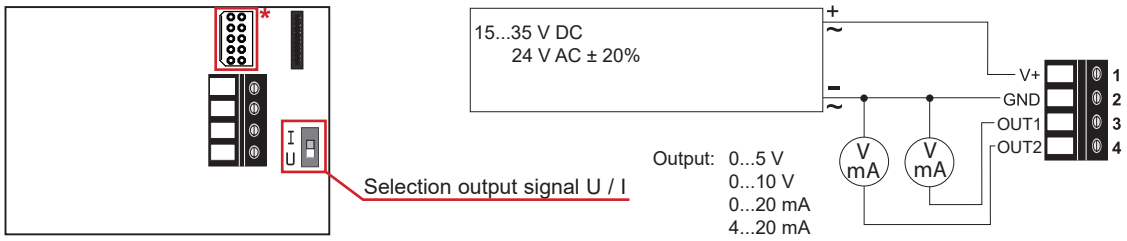
WARNING

Incorrect installation, wiring or power supply may cause overheating and result in personal injury or property damage. Cables must not be under voltage during electrical installation and connection or disconnection, especially at terminal connections on circuit boards. For correct cabling, always observe the presented wiring diagram for the product version used. The manufacturer cannot be held responsible for personal injury or damage to property caused by incorrect handling, installation, wiring, power supply or maintenance of the device.

EE211-M1J3 - Digital Output



EE211-M1A2/3/5/6 - Analogue Output



* Setup interface

Analogue Settings

Selection Output Signal Voltage / Current

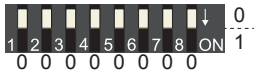
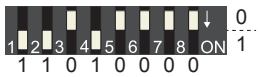
The factory setup of the output signal and scaling corresponds to the ordered product configuration. The output signal voltage (U) or 3-wire current (I), can be selected using DIP switch on the main electronics board (see Connection Diagram EE211-M1A2/3/5/6). This does not affect the output scaling, which can be configured using the PCS10 Product Configuration Software and the optional HA011070 USB-C configuration stick.

Digital Settings - RS485 Interface with Modbus RTU Protocol

Hardware Bus Termination

If required, the bus termination shall be realised with a 120 Ω termination resistor, jumper on the board.

Jumper fitted = bus terminated
Jumper not fitted = bus not terminated

Address Switch	Option
	**Address setting via PCS10 Product Configuration Software (= factory setting)** All DIP switches at position 0 → factory-set default address (239_{DEC}, 0xEF) applicable, can be changed via software (PCS10 or Modbus protocol, permitted values: 1…247). Example: Address is set via configuration software.
	**Address setting via DIP switches** DIP switches in any other position than 0 indicate the effective Modbus address which overrules the factory setting and any Modbus address set via PCS10 or Modbus command (permitted values: 1…247). Example: Address set to 11_{DEC} ($0000\,1011_{BIN}$).

Modbus RTU Setup

	Factory settings	User selectable values (via PCS10)
Baud rate	9600	9600, 19200, 38400, 57600
Data bits	8	8
Parity	Even	None, odd, even
Stop bits	1	1, 2
Modbus address	239	1...247

For details on how to set the address, baud rate, parity and stop bits, refer to the User Manual at www.epluse.com/ee211.

Modbus Register Map

FLOAT32

Parameter	Unit[1)]	Register number[2)] [DEC]	Register address[3)] [HEX]
Read register: function code 0x03 / 0x04			
Temperature	°C, °F	26	19
Relative humidity	%	28	1B
Water vapour partial pressure	mbar, psi	30	1D
Dew point temperature	°C, °F	32	1F
Wet bulb temperature	°C, °F	34	21
Absolute humidity	g/m^3, gr/ft^3	36	23
Mixing ratio	g/kg, gr/lb	38	25
Specific enthalpy	kJ/kg,BTU/lb	40	27
Frost point temperature	°C, °F	42	29

INT16

Parameter	Unit[1)]	Scale[4)]	Register number[2)] [DEC]	Register address[3)] [HEX]
Read register: function code 0x03 / 0x04				
Temperature	°C, °F	100	301	12C
Relative humidity	%	100	302	12D
Water vapour partial pressure	mbar, psi	100	303	12E
Dew point temperature	°C, °F	100	304	12F
Wet bulb temperature	°C, °F	100	305	130
Absolute humidity	g/m^3, gr/ft^3	100	306	131
Mixing ratio	g/kg, gr/lb	100	307	132
Specific enthalpy	kJ/kg,BTU/lb	100	308	133
Frost point temperature	°C, °F	100	309	134

1) The choice of measurement units (metric or non-metric) must be done according to the ordering guide, see EE211 datasheet. Switching from metric to non-metric or vice versa by using the PCS10 is not possible.
2) Register number (decimal) starts from 1.
3) Register address (hexadecimal) starts from 0.
4) Examples: For scale 100, the reading of 2550 means a value of 25.5. For scale 50, the reading of 2550 means a value of 51.

Communication settings (INT16)

Parameter	Register number[1)] [Dec]	Register address[2)] [Hex]	Size[3)]
Write register: function code 0x06			
Modbus address[4)5)]	1	00	1
Modbus protocol settings[4)]	2	01	1

Device information (INT16)

Parameter	Register number[1)] [Dec]	Register address[2)] [Hex]	Size[3)]
Read register: function code 0x03 / 0x04			
Serial number (as ASCII)	1	00	8
Firmware version	9	08	1
Sensor name (as ASCII)	10	09	8

1) Register number (decimal) starts from 1.
2) Register address (hexadecimal) starts from 0.
3) Number of registers
4) For Modbus address and protocol settings see Application Note Modbus AN0103 (available on the according product pages at www.epluse.com).
5) If the Modbus address is set via DIP-switch the response will be NAK.

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EE211 User Manual

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